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Recommended Citation

Memon AB, and Playfoot KA. Radiation-induced tongue myokymia with hypoglossal nerve damage, mimicker of motor neuron disease. Clin Case Rep 2017; 5(6):1056-1057.

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CLINICAL VIDEO

Radiation-induced tongue myokymia with hypoglossal nerve damage, mimicker of motor neuron disease

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Key Clinical Message

This teaching case of tongue myokymia offers clear electromyographic findings of myokymic discharges on two different sweeps. Radiation-induced tongue myokymia should be considered in the differential diagnosis for motor neuron disease (MND).

Funding Information

No sources of funding were declared for this study.

Keywords

Fasciculation, motor neuron disease, myokymia, tongue.

Received: 24 January 2017; Revised: 8 March 2017; Accepted: 12 March 2017

Clinical Case Reports 2017; 5(6): 1056–1057

doi: 10.1002/ccr3.965

A 69-year-old man presented for evaluation of tongue fasciculations concerning for motor neuron disease (MND). He had received radiation treatment 27 years earlier for squamous cell carcinoma (SCC) of the larynx, and 1 year ago, he underwent total laryngectomy and repeat radiation therapy for SCC recurrence. Approximately 3 months after recurrent therapy, he developed progressive tongue weakness. Neurological examination revealed right tongue atrophy and deviation (Fig. 1) with continuous, slow, rippling wave-like movements seen on both sides of the tongue, prominent on the right side, and suggestive of myokymia (Video S1). The patient had no other signs of MND. This clinical finding was confirmed on the needle electromyography (Video S2).

Myokymic discharges in limb muscles can be seen in radiation-induced brachial plexopathy. The pathophysiology of myokymic discharges is not well understood. Facial and tongue myokymia are examples of focal myokymia, which can be seen in brain stem tumors and demyelinating lesions such as multiple sclerosis [1]. Post-radiation hypoglossal neuropathy with myokymia has been described in the literature, but it is rare [2]. It is important to separate

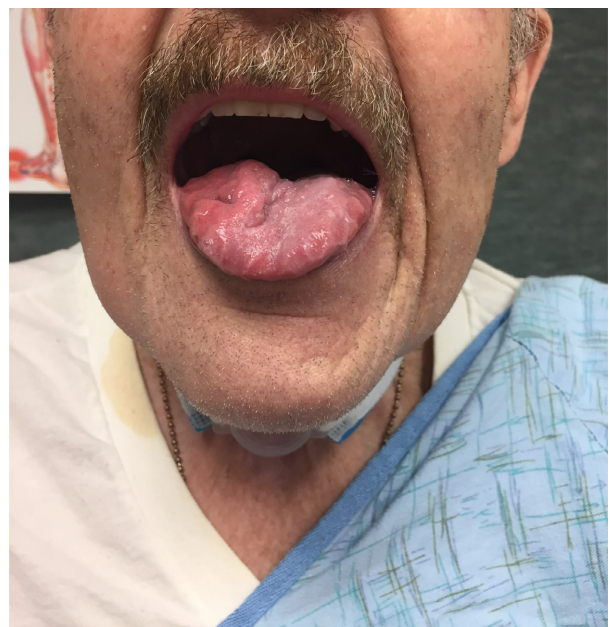


Figure 1. Right tongue atrophy and deviation suggestive of right hypoglossal nerve palsy.

myokymia from fasciculations clinically as well as electrophysiologically as it can mimic MND [1].

twelve years after radiation therapy. Clin. Neurophys. Pract. 1:41–42.

Conflict of Interest

None declared.

Authorship

ABM: involved in conception and design, acquisition of data, analysis and interpretation of data, drafting the article, revising it critically for important intellectual content, and final approval of the version to be published. KAP: contributed to conception, design, data collection, and interpretation of data.

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Supporting Information

Additional Supporting Information may be found online in the supporting information tab for this article:

Video S1. Continuous, slow, rippling wave like movements of the tongue are distinct from fasciculations, suggestive of myokymia. Movements are seen on both sides of the tongue but prominent on the right side.

Video S2. Needle electromyography of the right tongue at gain of 50 μ V/Div. and sweep of 10 m sec/div showed a bursting pattern of the same motor unit firing repetitively with a characteristic “Marching soldier” sound indicative of a myokymic discharge. When sweep was changed to 100 m sec/Div. the bursting pattern of the myokymic discharges becomes prominent.